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ABSTRACT

This paper relies upon a variety of historical and ethnographic sources to demonstrate the existence of Territorial Use Rights in Fishing (TURFs) along the Peruvian shores of Lake Titicaca. It shows that a search through a wide variety of archival and bibliographical sources not commonly relied upon by fisheries managers may turn to be the easiest way to demonstrate the existence of TURFs.

The first part of this paper provides a definition of TURFs and a description of the main characteristics of Lake Titicaca fisheries. The second part reviews the historical evolution of these fisheries and of the restrictions of fishing activities to particular social groups. It shows that TURFs have persisted in a customary form until the present. An analysis of reported conflicts over fishing grounds is used to demonstrate that TURFs are widespread along the shoreline. In conclusion, the need to evaluate the contribution of existing TURFs to the objective of fisheries management is underscored.

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TERRITORIAL USE RIGHTS IN FISHING (TURFS) ON LAKE TITICACA (PERU).

Dominique P. Levieil

This paper examines the existence of Territorial Use Rights in Fishing (TURFs) along the Peruvian shores of Lake Titicaca. It relies upon a variety of sources which consider both the history and ethnography of Lake Titicaca shore dwellers, because baseline studies of TURFs are rare, and because information on their persistence is scarce.

TURFs have recently attracted a growing amount of attention because of their potential for mitigating the ill-effects of the common property status of fisheries resources (Christy 1982). Since they would also have the practical advantage of the acceptability of their enforcement wherever they already exist, it has been argued that they should be incorporated into fisheries management practices (Johannes 1982; Pollnac and Littlefield 1983).

For decades, however, fishing traditions, among which TURFs, have been considered as impediments to fisheries development and to the improvement of fishermen's welfare (Kirby and Sczepanik 1957) because the latter was assimilated with a rapid increase in fishing effort. TURFs have therefore received only scant attention in the past. Information on their persistence is also difficult to collect: since TURFs have been superseded by governement regulations in most countries, they are generally informal and their enforcement is frequently illegal (Acheson 1975). Moreover, research on TURFs presents numerous logistical problems due to the dispersion and inaccessibility of many small-scale fishing settlements (Pollnac 1984).

Given TURFs potential for the management of small-scale fisheries, much could be gained from the knowledge of their existence, and from the understanding of their operation and effectiveness. Given the scarcity of specific information on TURFs, and the logistical difficulties involved in its collection, a search through a wide variety of archival and bibliographical sources not commonly relied upon by fisheries managers, may turn to be the easiest way to demonstrate TURFs existence. The multiplicity and diversity of sources consulted may compensate for the scarcity of relevant information within particular fields and sources. In addition, by yielding a large amount of unsuspected information on local TURFs, such a survey may save much valuable research time and effort.

The first part of this paper provides a definition of TURFs and a description of the main characteristics of Lake Titicaca fisheries. The second part reviews the historical evolution of these fisheries and emphasizes the restriction of fishing activities to a particular socio-

economic group. An analysis of the organization of fishing during Inca times and the early colonial period is used to demonstrate that this exclusiveness was based on formally granted TURFs. A review of the literature emphasizing the ethnography of shore dwelling populations confirms that these TURFs have persisted in a customary form until the present, while an analysis of reported conflicts over fishing grounds demonstrates that this persistence is a widespread rather than a localized phenomenon. In conclusion, the need to evaluate the contribution of existing TURFs to the objective of fisheries management thus their actual effectiveness is underscored.

1. TURFS AND LAKE TITICACA FISHERIES

1.1. Definition of TURFs.

In the last decade, a large number of studies have documented the existence of territorial fishing rights (see Pollnac and Littlefield 1983, and McGoodwin 1984 for overviews). Various denominations have been used to refer to them, until the term of Territorial Use-Rights in Fishing (TURFs) was coined by Christy (1982).

Territorial Use-Rights in Fishing (TURFs) are systems of water tenure which involve the holding of exclusive and limited rights by locally or culturally defined communities of shore dwellers over fishing resources found in specific parts of the aquatic environment. This definition disqualifies both nationally held Exclusive Economic Zones and privately owned fishing areas (Panayotou 1984). It expands on previous definitions (Christy 1982; Panayotou 1984) because it does not restrict the types of rights rights involved to exclusive use rights. Finally, this definition underscores the need for cautiousness in a survey of the literature in which the existence of TURFs is documented.

Studies in which the existence of TURFs is documented have often focussed upon particular fishing resources, lobster (Acheson 1975, 1979), crayfish (Levine 1984) or cod (Andersen and Stiles 1973). However, TURFs are more site specific than resource specific (Christy 1982). Contrary to resource rights which cover the whole range of a particular resource, they may concern only part of the range or habitat of the resources they involve as in the case of mobile and migratory species.

TURFs studies have often focussed upon particular fishing methods, such as fixed fishing traps (Martin 1979) and beach seines (Alexander 1977) although TURFs are not method specific. They often concern a variety of local fishing methods (Johannes 1977; 1978), although they may not affect all of them to the same extent. For instance, less effective fishing methods such as the the small gear used by foot fishermen (Andersen 1979;

Labby 1976:86) or hand collection by women and children (Allan et al. 1948:118) may not be subject to the restrictions of TURFs.

1.2. Lake Titicaca fisheries.

Lake Titicaca (Figure 1) lies across the border between Peru and Bolivia. It is a large (8,100 km2), high altitude (3,800 m), tropical lake (16 degrees south). Most of its shore dwellers cultivate native tubers and cereals, and raise livestock on small landholdings. Further inland, where the lake's moderating effect on the harsh local climate is hardly noticeable, people specialize in the herding of sheep and camelids (llamas and alpacas).

The high plateau surrounding Lake Titicaca, or Altiplano, has been densely populated for centuries. Most of its rural population belong to organized communities within which the collectivity has retained its traditional right of control over the productive activities of its members (Mayer 1985). These communities are thus characterized by the sharing of a common residence and territory, by their political and religious organization, and by their ability to coordinate productive activities at a supra-household level (Lambert 1977).

Fishing on Lake Titicaca involves small-scale operations, with simple technology, and small fishing craft often single-handed. Fishing operations are short range, rarely lasting for more than an overnight, or than a single day trip. Individuals, ususally from the male gender, go fishing with their close relatives and share the catch. Fishing infrastructures are literally non-existent. Watercraft are generally left either on the beach, or in one of the few tiny harbours built on exposed parts of the shoreline. About half of the fishermen operate from reed boats or balsas, propelled with a pole, a sculling oar and a small sail, while the other half fish from wooden boats propelled with a pair of oars and a sail. Only a minority of fishermen (less than 5%) own outboard engines with a greater range of operation (Bustamante and Trevino 1976).

Lake Titicaca fisheries are characterized by their low degree of capitalization. Local fishermen rely upon a variety of simple and relatively inexpensive fishing methods although gillnets are by far the most commonly used. Imported mesh panels are purchased, but local materials such as stones, reeds or grass are widely used to make sinkers, floats and ropes so as to minimize investment costs. Fishermen also rely upon household labor in as many fishing-related operations as possible for this same reason. Such activities include craft and gear construction or maintenance, and fish retailing.

Lake Titicaca fisheries are also characterized by a low degree of spatial concentration. Fishing is practiced on an occasional basis by individuals from approximately 100 shore communities (Bustamante and

FIG. I: LAKE TITICACA SHORE COMMUNITIES & TRIBUTARIES

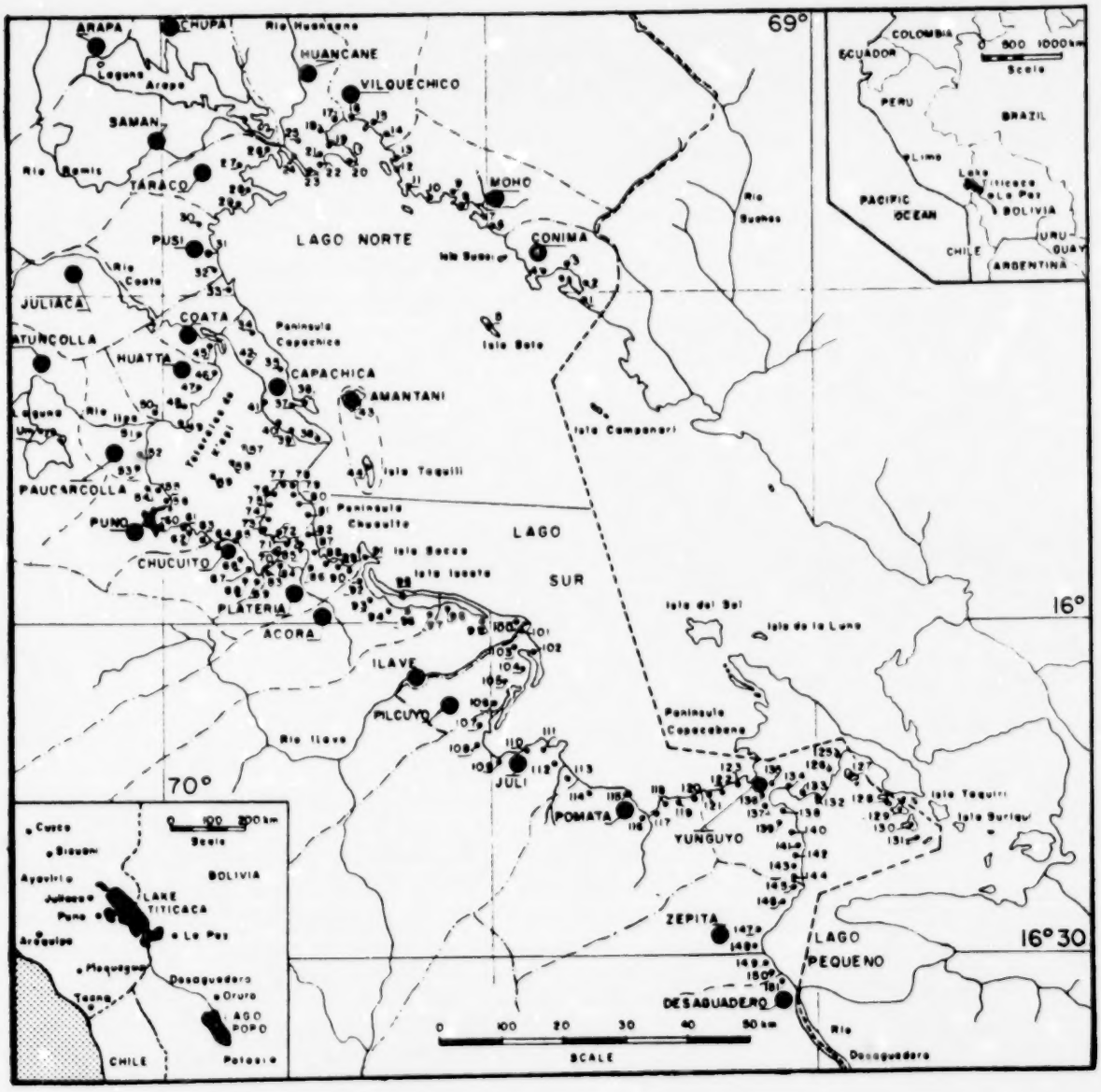

FIGURE 2: LIST OF LAKE TITICACA SHORE COMMUNITIES

District of CONIMA
1. Tilali-Patascachi
2. Pucuraya-Mililaya
3. Sucuni
4. Cayanajoni
5. Isla Soto

District of MOHO
6. Chujucuyo-Maquercota
7. Lacasani
8. Cariquita
9. Umuchi
10. Iscajja
11. Jachaparu
12. Quellojane
13. Jacantaya

District of VILQUECHICO
14. Llachajata
15. Aziruni
16. Vilquechico

District of HUANCANE
17. Quellahuyo
18. Chujachi
19. Huarisani
20. Junsani
21. Jacincoya
22. Piata
23. Cohasia
24. Balsapata
25. Yucahue

District of TARACO
26. Ramis
27. Tuni Requena
28. Requena
29. Huancollusco

District of PUSI
30. Corpa
31. Pusi
32. Carabuco-Llapas

District of CAPACHICA
33. Escallani
34. Chillora
35. Chiflon
36. Ccotos
37. Siale
38. Llachon
39. Yapura
40. Capano
41. Silacachi
42. Jilata

District of AMANTANI
43. Amantani
44. Taquili

District of COATA
45. Lluco Coata
46. Carata

District of HUATTA
47. Faon
48. Yasin
49. Moro
50. Matare
51. Pampa Illpa

District of PAUCARCOLLA
52. Yanaricu
53. Collana

District of PUNO
54. Huaraya
55. Jirata Vizcachuni
56. Chulluni
57. Titini
58. Huacahuacani
59. Totorani
60. Puno Ciudad
61. Chimu
62. Ojerani
63. Ichu

District of CHUCUITO
64. Cusipata
65. Barco-Chucuito
66. Chinchera
67. Concachi
68. Potojani
69. Camacani
70. Isla Quipata
71. Isla Chilata
72. Cochiraya
73. Ccarana
74. Parina
75. Tacasaya
76. Pucani
77. Luquina Grande
78. Luquina Chico
79. Carina
80. Churo
81. Perca

District of PLATERIA
82. Huataraque
83. Ccota
84. Pallalla
85. Laccone
86. Huermeamaya
87. Sihuecani
88. Anu Callejon
89. Huincalla
90. Titilaca

District of ACORA
91. Isla Socca
92. Sta Rosa Yanaque
93. Ccoccane
94. Tunuhuaya
95. Ccoccosani
96. Isla Iscata
97. Amaya

District of ILAVE
98. Sullcacatur.
99. Camicachi
100. Sta Rosa Huayllata

District of PILCUYO
101. Huayllata
102. Cachipucara
103. Acaso
104. Queti
105. Vilcamaquera
106. Quispemaquera

District of JULI
107. Santiago Mucho
108. Suahacota
109. Irupalca
110. Juli Pueblo
111. Chucasuyo Cajje
112. Sihuayro
113. Challapampa

District of POMATA
114. Huacani
115. Pomata Pueblo
116. Sajo
117. Santiago Ccama
118. Chatuma
119. Chimpu
120. Cuturapi

District of YUNGUYO
121. Quenuani
122. Acari
123. Imicate
124. Yunguyo Pueblo
125. Tinacahi
126. Unicachi
127. Isla Iscaya
128. Isla Caana
129. Isla Yuspique
130. Isla Anapia
131. Isla Suana
132. Vilurcuni
133. Pajjano
134. Tapoje
135. Calampune
136. Sta Cruz Chambi
137. Copapujo
138. Chinomani
139. Yanapata
140. Tahuaco
141. Sanquira
142. Amaquilla
143. Calacoto
144. Challapampa

District of ZEPITA
145. Tacapize
146. Copani
147. Isani
148. Zepita
149. Huilacaya
150. Ayrihua

District of DESAGUADERO
151. Sta Cruz Cuni

Note: Communities numbered sequentially and counter-clockwise

Trevino 1976). Since there are only a few harbours, there is little clustering of fishing craft into fleets operating from the same harbour. Crafts can be found all along the shoreline because fishermen leave them within easy reach from their home compound, and because their houses are scattered among the fields rather than gathered into villages. Consequently, only in areas with exposed shores do fishermen tend to congregate in the small fishing harbours they have built.

Finally, Lake Titicaca fisheries are characterized by the lack of occupational specialization of participating fishermen. Few shore dwellers can rely entirely upon their fields and herds to meet their household food and cash needs. Most of them engage in fishing as a secondary activity to agriculture and often in combination with a host of cash generating activities, such as handicraft production, cattle fattening, small-scale marketing, and seasonal migratory wage labor. Consequently, most fishermen fish only a few days a week, and fish both for consumption and for trade. Fishing trips are undertaken once more pressing agricultural activities have been completed, according to time availability. Some individuals fish only sporadically (occasional fishermen), while others fish only for a few months each year, usually during the rainy season (seasonal fishermen).

The fish resources of Lake Titicaca include native and introduced species. Native species belong to the Orestias genus represented by a number of species among which fishermen commonly distinguish various types of carachis and ispis, and to the Trichomycterus genus, represented by a single species. The exotic species include the trout (Salmo gairdneri) introduced in the lake in the early 1940's, and the silverside (Basilichtys bonariensis) introduced in the early 1950's (Bustamante and Trevino 1976).

Lake Titicaca fish resources have been exploited by its dense shore population for millenia. However, available historical references show that access to these resources has been formally regulated as early as the beginning of the 16th century, and that even earlier, it was restricted to a particular group of fishermen.

2. EVIDENCE OF THE EXISTENCE OF TURFS AROUND LAKE TITICACA

2.1. Historical evolution of Lake Titicaca fisheries.

According to archeological sources fish, waterfowl and lake-plants played a major role in the subsistence of early Altiplano cultures between 2000 and 100 BC. During this formative period, local populations made the transition from hunting and gathering, to a combination of camelid pastoralism, tuber agriculture, and lacustrine resources harvesting, which was sufficient to support a number of sedentary villages (Browman 1981). The evolution of these regional cultures culminated with the Tiahuanuco

commercial and religious empire between 100 BC and AD 1250 (Kolata 1978). Little is known of the importance of lacustrine resources during the Tiahuanuco period itself, although the location of most Tiahuanuco sites on the periphery of Lake Titicaca suggests the persistent use of lacustrine resources (Mujica 1985). Moreover, evidence of aquatic transportation of large blocks of stone on balsas (Browman 1981) suggests that shore dwellers already knew how to make reliable fishing craft.

The desintegration of the Tiahuanuco empire was followed by a period of chronic wars between a number of small Aymara kingdoms, to which the Inca conquest put an end around 1450 (Browman 1981). The end of this war state allowed local populations to abandon their strongholds in the hills, and to settle back on the lakeshore (Hyslop 1976). This suggests that after a transition period, lacustrine resources might have regained their importance.

The Altiplano region remained under the direct control of the Spanish crown after its conquest in the early 1530's, because of its wealth in camelids and in mineral deposits (Hyslop 1976). Due to this special administrative status, some documentation on local conditions in the early colonial period is available. The official tax rate (or taza) set in 1575, for example, provides valuable information on the wealth and sources of income of different sectors of the local population. It indicates in particular that during the colonial era, as under the Inca administration, and possibly even earlier, fishing on Lake Titicaca was carried out exclusively by Uros fishermen (Diez de San Miguel [1567] 1964).

Although it is unclear to what extent the Uros represented an ethny or a linguistic group or even a tax category, it is widely believed that they were early settlers of the Altiplano later pushed into the vast marshes of Lake Titicaca by their Aymara neighbours (Labarre 1946; Manelis 1973). Uros fishermen themselves, were poor, landless and belongued to a caste of inferior social status (Vellard 1963; Manelis 1973). Part of their contribution to the taza had to be paid in dried fish because it was the only resource directly available to them. However, not all Uros were poor and landless fishermen since many were engaged in agriculture and herding, and were as rich as their Aymara neighbours (Wachtel 1978). This suggests that only those of the Uros who had to pay their taxes in fish were actually fishermen.

At the beginning of the colonial period, the value of Uros fishermen's contribution in fish to the taza is likely to have been low simply because only a small part of fishermen's taxes could be paid directly in fish (Julien 1983). The colonial administration had little use of dried fish which could not be shipped back to Spain like precious metal. A hundred years later, this contribution may have grown substantially, as increasing large quantities of dried fish had to be shipped to the growing contingent of forced laborers in the silver mines of Potosi a few hundred kilometers south of Lake Titicaca (Soldi 1978). Unfortunately, for later periods, available documents offer only sketchy information on local fisheries, on

their organization, and on their contribution to the Altiplano economy (Mino 1984; Forbes 1870).

2.2. Formal status of TURFs.

During Inca times and the early colonial period which followed it, fishing in Peru was characterized by collective property rights, not only over beaches and landing spots, but also over fishing zones (Buse de la Guerrra 1981; Flores-Galindo 1981; Ramirez-Horton 1981; Rostworowski 1977, 1981). Such exclusive fishing rights were also found on inland water bodies, such as the Rimac river (Antunez 1981:33). According to Buse (1981) the Inca administrators had even combined this allocation of fishing space with an adequate control of fishermen's density, using such drastic measures as the forced transfer of fishing populations to new fishing zones along the Pacific Coast, or to the shores of inland water bodies, such as the transfer of a group of fishermen from northern Peru to the shores of Lake Titicaca.

Since the Inca empire was a highly centralized organization (Pease 1985), it is likely that the same organizational structures were replicated everywhere, as repeatedly claimed by early chroniclers (Ramirez 1985:420-30). With respect to fishing in particular, there are strong reasons to believe that collective fishing rights were found all along its Pacific shores (Rostworowsky 1977) and on inland water bodies as well. Forced transfers of fishing populations from the Pacific coast to the shores of inland water bodies (Buse 1981) may have contributed to the establishment of fishing zones in the latter area, either through the granting of fishing rights by Inca administrators, or through the transfer of the ensuing custom by the displaced populations themselves. Alternatively, centrifugal influences for the organization of fishing may have come from the Altiplano to the Pacific coast long before the Inca conquest. The existence of colonies from the Altiplano along the Southern coast of Peru in the Tiahuanuco period, and the extensive contacts between these colonies and the Altiplano is now well documented (Hyslop 1976; Mujica 1985).

In the case of Lake Titicaca, not only were the Uros fishermen the only ones to fish, but the exclusivity of their collective rights over aquatic resources had been formally granted to them by the Inca emperor Huayna Capac, who, at the beginning of the 16th century: "determined how the Uros had to live on that lake, and divided its shores where they had to fish" (Cabello Balboa [1568], quoted in Manelis 1973:147, author's translation).

During the colonial period, the Spanish rulers tried to open fishing to all, irrespective of ethnic or geographical origins, and to assert the open access character of ocean fisheries. Apparently they met with little success at first. The Spanish administrator Gregorio Gonzales de Cuenca, for example, tried to open ocean fisheries access to all, but had to revoke his initial decision when confronted with the strong opposition of

indigenous fishermen of the northern coast of Peru in 1566 (Rostworowski 1981:85-86). It was not until the early 1770's, that repeated conflicts between neighboring fishing communities, eventually leading to judicial actions, provided the Spanish colonial government with a justification to open access to landing spots to all, and to allow everyone to fish (Flores-Galindo 1981:160-161; Rostworowski 1981:85-86).

All this indicates that territorial fishing rights have been formally recognized on Lake Titicaca shores, as in the rest of Peru, for more than 250 years (1500's to 1770's). They must have persisted informally for decades after that, since in 1786 the colonial government had to reaffirm the "libertad de pescar" (Flores-Galindo 1981:160-161). Moreover, lawsuits between neighboring fishing communities have been reported at least until the late 1790's (Rostworowski 1981:85). There is actually ample evidence of TURFs persistence until the beginning of this century all along the Pacific shoreline of Peru (Fiedler 1941), and until the present in many parts of it (Edgar Valdivia, personal communication, July 1984). It may be thus be hypothesized that TURFs are still informally enforced along the shores of Lake Titicaca too.

2.3. Persistence of informal TURFs.

The accounts of numerous observers lend support to the hypothesis of TURFs persistence. For example, references indicating the persistence of the ownership of landing spots (Pacori 1976:15) and of fishing weirs by individuals (Tschopik 1946:525; Solc 1969:51) or by extended families (Vellard 1949:180) also suggest TURFs persistence. Similarly, the claim that fishing on Lake Titicaca and its tributaries is an activity carried by shore dwellers exclusively, suggests that inland dwellers are excluded from local fisheries (Romero 1925:438; Martinez 1962:55; Galdo 1962a:92, 1962b:66, 1967:188; Collins 1981:106). This is confirmed by their absence from a census of local fishermen carried in 1976 (Bustamante and Trevino 1976), or from official registration lists of fishermen and fishing boat owners.

References to the ownership of fishing places (Wegener 1934, quoted in La Barre 1948:184-185), and of fishing zones by immediately adjacent fishing communities (Tschopik 1946:521; Galdo 1962a:92; Solc 1969:53) lend further support to the hypothesis of communal TURFs persistence. Yet, the strongest confirmation of this hypothesis comes from the indication that various shore communities (Galdo 1962a) or that particular ones, such as Chucuito in Peru (Tschopik 1946:521) and Suriqui in Bolivia (Solc 1969) claim and effectively enforce exclusive territorial fishing rights.

Although the persistence of TURFs on Lake Titicaca shores may be inferred from these references, little information is provided on their distribution along the shoreline. Futher evidence is needed to show that communal TURFs are widespread rather than exceptional features of a few shore communities. Fortunately, the conflicts occurring in 1976 over access to fishing zones have been reported by local fisheries scientists preoccupied by what they viewed as a hindrance to fisheries development

(Bustamante and Trevino 1976). Their reports demonstrate the widespread distribution of these conflicts, and consequently that of Lake Titicaca TURFs.

2.4. TURF-related conflicts.

Before the early 1960's, TURF-related conflicts were apparently rare (Solc 1969:53) and relatively weak in contrast to frequent, and sometimes bitter disputes over agricultural land and grazing rights (Tschopik 1951:156, Buechler and Buechler 1971:52-53). According to Tschopik (1946:525) violation of communal fishing zones by outsiders only used to elicit a call for punishment through black magic.

According to Bustamante and Trevino (1976) TURF-related conflicts had grown more common by the mid 1970's. Their reports of such conflicts can be be classified into three different categories according to the type of fishing grounds encroached upon and the fishing methods used (for the location of TURF-related conflicts see Figure 1). In the first case, outsiders would set their gillnets in the richest carachi fishing grounds. Fishermen from Ichu-Raya, Ojerani, and Chucuito-Barco in the Puno Bay trespassed into the fishing grounds of K'api. Similarly those of Capano on the Peninsula of Capachica trespassed into the areas of the neighbouring communities of Siale, Cotos, and Yapura. Finally, competing fishermen from Pusi and Escallani in the northwest of the lake, trespassed and fought over the area of Sejnajachi (Bustamante and Trevino 1976).

Secondly, outsiders trespassed or competed over the richest trout fishing grounds mostly along the northern shores of the lake. Fishermen from Cohasia and Piata, for example, competed with those from Huarisani and Junsani respectively, over access to the mouth of the Ramis river (Ibid.).

And thirdly, outsiders trespassed with trawling nets instead of gillnets, into their neighbours' fishing grounds. Those from Vilurcuni and Amaquilla island, for example, trespassed into the areas of all communities of the western shores of the southernmost part of the lake called the Lago Pequeno. Similarly, ispi fishermen from Llachon invaded the fishing areas of various communities along Capachica and Chucuito Peninsulas, and of Taquili and Amantani Islands, as did those from Jacantaya and Jachaparu along the northeast shores of the lake (Ibid.).

The widespread occurrence of conflicts over access to various types of fishing grounds around the lake implies that the persistence of informal TURFs is not an isolated phenomenon affecting only a few shore communities, nor one limited to particular fish resources or fishing methods. Moreover, the involvement in those conflicts of large groups of fishermen from well identified shore communities shows that these territorial fishing rights are collectively rather than individually held, thus that they fit the

definition of TURFs adopted earlier. As for the lack of specific reference to Uros fishermen as TURF holders, it results from their assimilation to their Aymara neighbours (Vellard 1963; Hyslop 1976).

3. CONCLUSION

This study relies upon historical and ethnographic materials to demonstrate that TURFs exist along the shores of Lake Titicaca. Historical evidence shows that TURFs have been formally recognized for centuries, while ethnographic sources demonstrate that they have persisted under a customary form until the present. Although these TURFs have lost their formal status, the occurrence of related conflicts indicates that they are actually enforced by their holders rather than arising from outsiders' lack of interest in lacutrine resources. These conflicts also indicate TURF holders' ability to protect the resources within their exclusive fishing zone. Weakly or inactively enforced TURF's are unlikely to demonstrate much resilience to social change. Increased competition arising from the introduction of more efficient fishing methods, or that of fishing craft capable of longer range operations, or from an increased demand for fish products, may quickly lead to their demise.

Although some authors do not hesitate to advocate granting a formal status to TURFs (Johannes 1982) or their incorporation to fisheries management practices (Pollnac and Littlefield 1983) most contributors are more cautious in their recommendations. They acknowledge TURFs potential benefits, but they also recognize the paucity of information on their actual contribution to fisheries management objectives, and suggest careful examination of their appropriateness for such a purpose (Pearse 1980; ICLARM 1981; Kapetsky 1981; Christy 1982; Panayotou 1982, 1983; Lawson 1984; Lamson and Cohen 1984). As argued by Acheson (1981), it is critical to determine whether the "many kinds of norms and institutions fishermen (have) invented to control access and fishing procedures could be used as a basis for successful resource management" (Acheson 1981:307-308).

In the case of Lake Titicaca TURFs, demonstrating their existence and acknowledging their potential contribution to the objectives of fisheries management is not quite sufficient to argue in favour of their formal recognition. Their actual effectiveness in controlling local fishing effort must be evaluated.

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